

STATE OF GEORGIA
TIER 2 TMDL IMPLEMENTATION PLAN **REVISION 0**

Bailey Branch
 Flint River Basin
 Sumter County

I. INTRODUCTION

Total Maximum Daily Load (TMDL) Implementation Plans are platforms for evaluating and tracking water quality protection and restoration. These plans have been designed to accommodate continual updates and revisions as new conditions and information warrant. In addition, field verification of watershed characteristics and listing data has been built into the preparation of the plans. The overall goal of the plans is to define a set of actions that will help achieve water quality standards in the state of Georgia.

This implementation plan addresses the general characteristics of the watershed, the sources of pollution, stakeholders and public involvement, and education/outreach activities. In addition, the plan describes regulatory and voluntary practices/control actions (*management measures*) to reduce pollutants, milestone schedules to show the development of the management measures (*measurable milestones*), and a monitoring plan to determine the efficiency of the management measures.

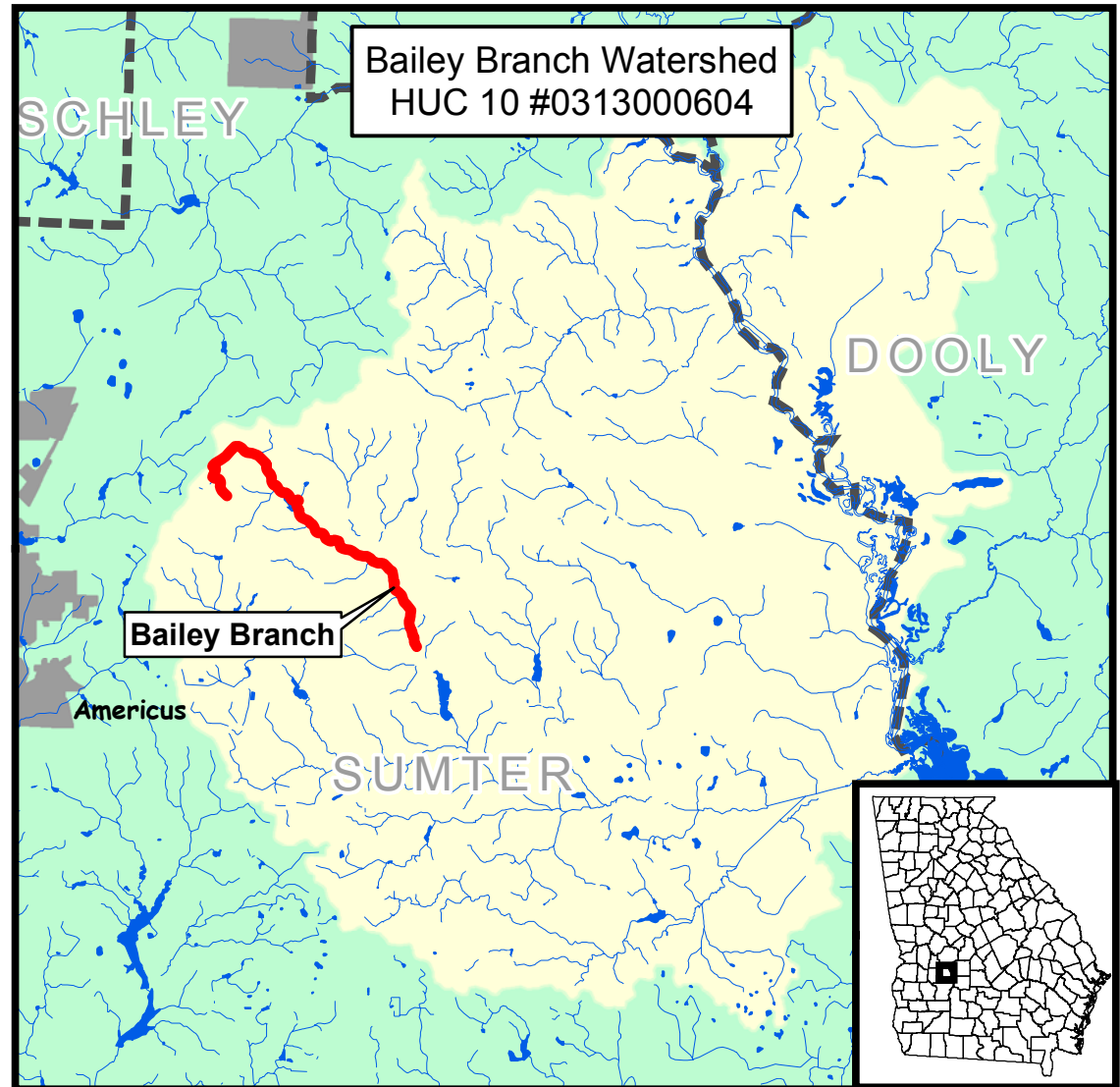


Table 1. IMPAIRMENTS

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT
Bailey Branch	Headwaters to Browns Mill Pond	Biota (sediment)
Lime Creek +	Little Lime Creek to Lake Blackshear	Fecal Coliform Bacteria

+ RDC previously developed inventory for stream which will be used as plan.

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC 10# 0313000604. Include an updated overview of watershed characteristics. Identify new conditions and verify or correct information in the TMDL document using the most current data. Include the size and location of the watershed, political jurisdictions, and physical features which could influence water quality. Describe the source and date of the latest land cover/use for the watershed. Describe and quantify major land uses and activities which could influence water quality. See the instructions for more information on what to include.

The referenced ten-digit HUC is approximately 81,000 acres in size¹, the overwhelming majority of which is in forest or an agriculture-related use. Located east of the City of Americus (Sumter County), approximately 15% of the basin extends across the Flint River into Dooly County. The north half of this watershed is part of the most heavily forested and least populated area of Sumter County. There are not any incorporated communities located in this HUC. The limited development which has occurred over the past ten years consists almost entirely of rural (single-family) housing. The impaired segment is located in sub-basin HUC 031300060404 (refer to color map on next page) which originates on the northwest boundary of the larger watershed. This sub-basin covers approximately 10,000 acres², and Bailey Branch, the primary waterway, traverses the full length of the basin. This basin is the subject of the balance of this document. Land use is as follows:

Bailey Branch Land Use Distribution				
Forest	Row Crop Agriculture	Pasture/Hay	Residential/Developed	Other*
49%	28%	11%	<1%	12%

* Other: water, transition and wetlands

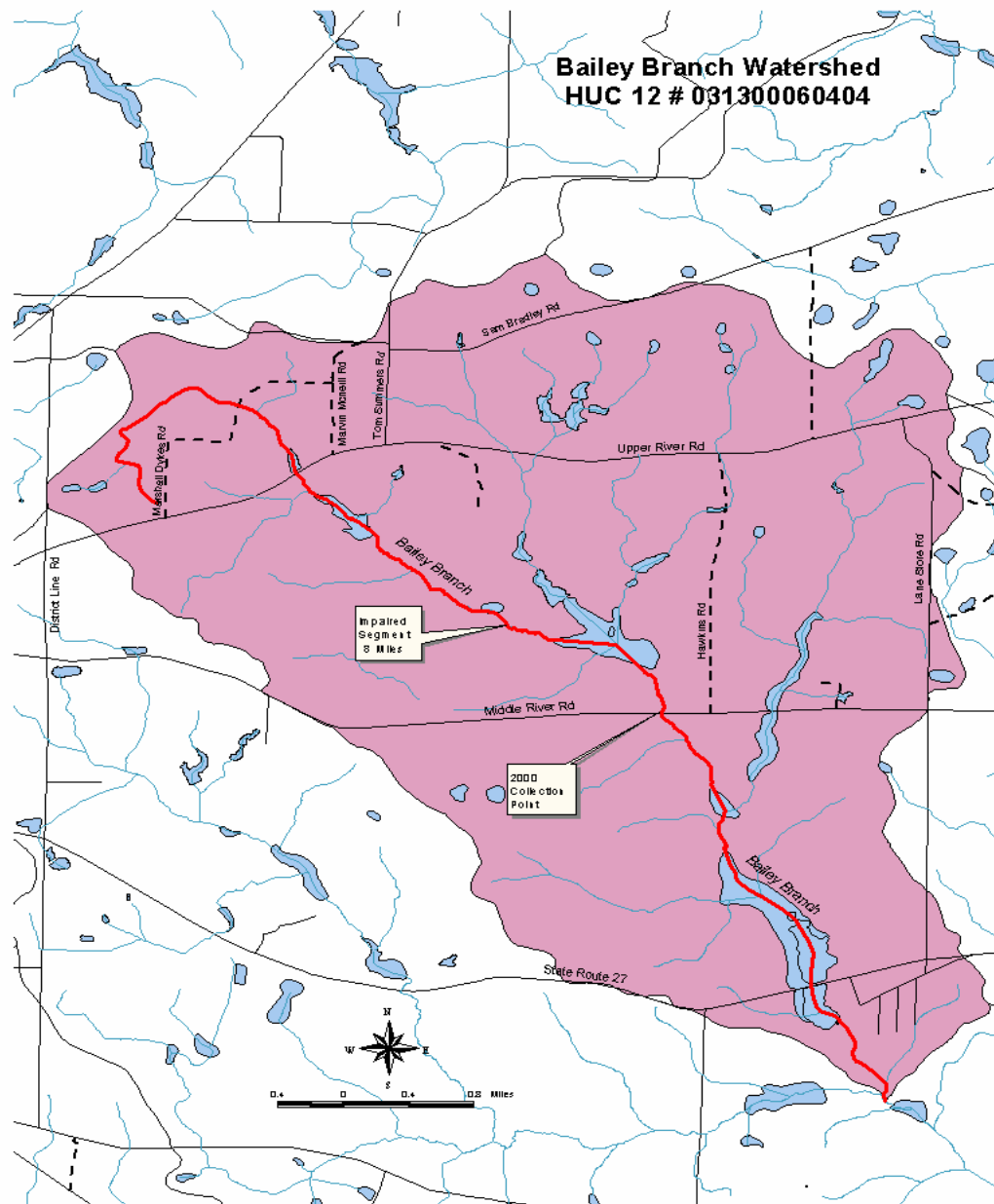
Source: Total Maximum Daily Load Evaluation for Twenty-eight Stream Segments in the Flint River Basin for Sediment (Biota Impacted), January 2003; Georgia Department of Natural Resources-Environmental Protection Division

According to the source, this data is from Landsat Thematic Mapper digital images developed in 1995. In absence of significant development, more recent land use acreages have not been generated. As is the case with the larger HUC, development in this basin over the past ten years has consisted almost exclusively of (very limited) single-family housing. Some commercial timber harvest has occurred followed by reforestation, and some row crop acreage has been converted to forest land. Overall, respective acreage distributions may differ from data presented in the accompanying table by one percentile up or down (refer to color aerial photo on page 4).

The only watershed planning or assessment activity known to be occurring is the Flint River Basin Planning performed under direction of the Georgia Department of Natural Resources-Environmental Protection Division every five years, and currently scheduled for 2005. No other water quality management or sampling programs are known to be in effect or planned. There are not any Phase I or Phase II stormwater treatment regulated communities, stormwater utility districts or municipal wells in this watershed. The basin is neither in nor part of a water supply watershed. This sub-basin is located entirely in unincorporated Sumter County which has permit issuing authority for land disturbing activities (erosion and sedimentation control ordinance). There are not any watershed or Adopt-A-Stream associations in the basin. Sumter County enforces a Logging and Trucking Ordinance regulating the effects of forestry activities on roads, and in river corridors and wetlands. No Section 319(h) grant projects are known to have been implemented or planned.

¹ Department of Natural Resources-EPD

² Department of Natural Resources-EPD





To minimize erosion and stream sedimentation from forestry practices, the Georgia Forestry Commission's 7th District office has a specially trained Water Quality Coordinator to educate the forest community about, and promote the use of, forestry Best Management Practices (BMPs). Loggers and foresters are required by most major timber companies to attend 3-day Master Timber Harvesters' Program training which emphasizes use of forestry BMPs.

The District conducts monthly BMP Assurance examinations to provide "reasonable assurance" that forestry operations comply with BMPs. Active sites are identified through numerous means and inspected in an effort to educate landowners about BMPs, their responsibilities and liabilities concerning state water quality laws, and to provide on-the-ground assistance to loggers or operators before problems occur. No examinations have occurred in this unit.

The GFC also monitors BMP implementation. The 7th District participated in the 4th statewide BMP implementation survey (2002) which collected data on 420 randomly selected sites where forestry activities had occurred within the previous two years. Of the 40,159 acres evaluated across the state, 99.1% were in compliance with BMPs. Of the 226 miles of stream evaluated on 287 sites, 94.2% of the miles were in compliance with BMPs. EPA identifies silviculture as the lowest contribution source of nonpoint pollution. The Commission also investigates and mediates forestry water quality and wetland complaints.

The Conservation Reserve Program reduces soil erosion, protects the nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodable cropland, other cropland or other environmentally sensitive acreage to vegetative cover. The watershed has landowner participation in this program.

The Environmental Quality Incentives Program provides assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns. The program provides assistance complying with environmental laws, and encourages environmental enhancement. The purposes are achieved through implementation of a conservation plan which includes structural, vegetative, and land management practices. Incentive payments can be made to implement one or more land management practices, such as residue management, upland wildlife habitat management, and grazing land management. The financial assistance available statewide is very limited, and directed more toward addressing state priorities that local need. There is no such assistance currently in the watershed.

Bailey Branch

COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Bailey Branch	Headwaters to Browns Mill Pond	8 miles/8.8 square miles	Fishing	PS

Source: Total Maximum Daily Load Evaluation for Twenty-eight Stream Segments in the Flint River Basin For Sediment (Biota Impacted), January 2003

III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs

After reviewing the TMDLs written for this stream, complete the following tables with **the information found in the TMDLs**. List each parameter for which the stream segment is impaired and the water quality standard violated. See the instructions for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLs

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Biota	No degradation to fish community.	Sediment	41%

IV. IDENTIFICATION AND RANKING OF POTENTIAL SOURCES OR CAUSES OF IMPAIRMENT

INVESTIGATE AND EVALUATE the sources of impairment for each parameter listed in Table 2. Write a narrative describing efforts made or procedures used to verify the significance and extent of the sources or causes of each impairment listed in the TMDLs. Include:

- Involvement of stakeholder group
 - Field surveys
 - Review of land cover data
 - Evaluation of sources
-

County tax records were researched to identify owners of properties contiguous to the impaired segment. These and “public” stakeholders received a written invitation (copy attached) to a stakeholder meeting to discuss the reported high sediment counts, and possible cause(s) and corrective action(s) which might contribute to an improvement in water quality. TMDL background information was included in the invitation. A newspaper notice (Americus Times-Recorder) invited the general public to the same meeting.

As stated in Section II, recent land use acreage distributions have not been generated, but the combination of site visits by RDC staff, and familiarity with the watershed among RDC staff, public and private stakeholders confirmed the reasonable accuracy of the accompanying tabular data.

The 1994 flood (Tropical Storm Alberto) damaged some earthen/farm dams, resulting in sediment deposits downstream. Based on information obtained after the meeting, agricultural conservation practices are not common in the basin. A very high percentage of the cultivated land is prime farmland, but most slopes are less than 2%; virtually all are 5% or less. In addition, the high proportion of forest/woodland in the area provides the impaired segment and tributaries deep natural buffers. A small percentage of the watershed's road network is unpaved, and the creek does not cross any unpaved routes. The creek flows through three impoundments, one of significant size, all upstream of the 2000 water quality sample site.

Georgia Forestry Commission representatives described the proactive education, assessment and monitoring activities of the agency to limit erosion and sedimentation from silvicultural activities.

To the extent possible, identify sources and quantify the extent of pollution in the stream segment for each of the parameters listed in Table 2 and evaluate the likely impact on the parameter load to the stream. This should follow research performed and described in preceding narrative and should correct or add information to the TMDLs. **The *SOURCES SHOULD BE RANKED*** from those having the most impact to those having the least impact. The estimated extent of contribution can be expressed as the area of the watershed effected, the stream miles effected, or the number of activities contributing to the problem. The magnitude of contribution should be estimated to be large, moderate, small, or negligible.

Table 3. CONCLUSIONS MADE OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT

PARAMETER 1	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Biota	"Flood of '94"	Sediment deposited downstream of flood damaged impoundments	Moderate	Legacy sediment
Biota	Silviculture	Possible introduction of sediment from normal practices and stream crossings when BMPs are not followed.	Moderate	Inadequate BMP compliance

V. STAKEHOLDERS

PUBLIC INVOLVEMENT AND THE ACTIVE PARTICIPATION OF STAKEHOLDERS is essential to the process of preparing TMDL implementation plans and improving water quality. Stakeholders can provide valuable information and data regarding their community, impaired water bodies, potential causes of impairments, and management practices and activities which may be employed to reduce the impacts of the causes of impairment.

Describe outreach activities to advise and engage stakeholders in the TMDL implementation plan preparation process. Describe the stakeholder group employed or formed to address the impaired segments in the watershed. Summarize the results of the number of attendees and meetings and describe major findings, recommendations, and approvals.

County tax records were researched to identify owners of properties contiguous to the impaired segment. These and "public" stakeholders received a written invitation (copy attached) to a stakeholder meeting to discuss the reported high sediment counts, and possible causes and corrective action(s) which might contribute to an improvement in water quality. TMDL background information was included in the invitation. A newspaper notice (Americus Times Recorder) invited the general public to the same meeting. As stated in Section II, recent land use acreage in the watershed has not been generated, but site visits and familiarity with the watershed confirmed the reasonable accuracy of the accompanying tabular data.

Sixteen stakeholders were invited to the August 23, 2004, meeting at the Middle Flint RDC to address the listing of Bailey Branch on the Federal 303(d) List for high sediment counts. Four stakeholders with interest in this specific watershed attended the meeting. One private landowner stated two large timber tracts were clear-cut in 2000, at least one of which was along the impaired segment and that no stream buffer zone was maintained. Skidders reportedly crossed the creek throughout the harvest and no efforts were made to repair the damage from ruts left in the channel or tire marks on creek banks. Among the few comments in the Biomonitoring Report filed with the water quality sampling data (9/2000) was reference to sedimentation purportedly from silvicultural activities in the watershed.

Because of the natural creek buffer and absence of development activity in the watershed, no contributing sites could be identified. The only accompanying photographs (in rear of document) are of the creek from a paved county road near the middle of the impaired segment.

List the watershed or advisory committee members of the stakeholder group for this segment in the following table.

Table 4. COMMITTEE MEMBERS

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Jimmy and Carey Green landowners	203 Bumphead Road	Americus	GA	31709	229-924-2300	
Brent McCarty/GFC	243 U S Highway North	Americus	GA	31709	229-931-2511	
Phil Porter/GFC	243 U S Highway North	Americus	GA	31709	229-931-2436	

In Appendix A, list the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

VI. MANAGEMENT MEASURES AND ACTIVITIES

Describe any management measures or activities that have been put into place or will be put into place including regulatory or voluntary actions or other controls by governments or individuals that specifically apply to the pollutant that will help achieve water quality standards. Include who will be responsible for the measure, how it will be funded, the status, the date it will be or was initiated, and a short description of how effective the measure is or will be.

Table 5. MANAGEMENT MEASURES AND ACTIVITIES

MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/ IMPLEMENTED	EFFECTIVENESS (Very, Moderate, Weak)
Federal Clean Water Act Section 404 (Ag and Forestry)	EPA (situations involving forestry are normally referred to GFC to determine compliance)	Requires agricultural and silvicultural practices to adhere to BMPs and 15 baseline provisions for road construction/maintenance in and across waters of the U.S. to be exempted from permitting process.	Farmers Timber Harvesters	Current	June 6, 1998	EPA identifies silviculture as the lowest contribution source of nonpoint pollution
Trucking and Logging Ordinance	Sumter County	Regulates silvicultural activity on county roadways, and in river corridors and wetlands.	Timber Harvesters	Current		EPA identifies silviculture as the lowest contribution source of nonpoint pollution
Memo to the Field: Application of BMPs to mechanical silvicultural site preparation activities for establishment of pine plantations in SE. (Silviculture)	EPA/ US Army Corps of Engineers - (cases normally referred to GFC for initial determination)	Identifies certain bottomland hardwood wetlands that should be subject to permitting if converting to pine plantations.	Landowner	Current	November 1995	
Federal Farm Bill (Swampbuster, Ag)	US Department of Agriculture NRCS	Prohibits landowners participating in federal price support programs from converting forested wetlands to ag.	-	Current		
GA Growth Planning Act (OCGA 12-2-8)	GA DNR, Department of Community Affairs, and local units of government	Authorized GA DNR to develop minimum planning standards local jurisdictions could adopt and enforce (river corridors, groundwater recharge areas, and wetlands) Silvicultural activities may be exempted from permitting provided	Landowners Developers	Current	1991	

		activity complies with BMPs				
Georgia Forestry Commission Monthly BMP Assurance Examination	Georgia Forestry Commission (matters involving enforcement are generally referred to GA EPD)	To document "reasonable assurance" water quality will be proactively protected during silvicultural operations, GCF will offer monthly BMP assurance examination of active sites. Sites within watersheds of biota (sediment) impaired streams will be given priority for examination.	Georgia Forestry Commission	Current	1/1/03	EPA identifies silviculture as the lowest contribution source of nonpoint pollution
Georgia Water Quality Control Act (OCGA 12-5-20)	GA DNR EPD	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats.	Developers	Current	1964	
Georgia's Best Management Practices	Georgia Forestry Commission (matters involving enforcement are generally referred to GA EPD)	Inform landowners, foresters, timber buyers, loggers, site preparation and reforestation contractors, et al, about commonsense, economical and effective practices to minimize nonpoint source & thermal pollution.	Timber Harvesters	Current	1989, 1997	EPA identifies silviculture as the lowest contribution source of nonpoint pollution
Conservation Reserve Program (CRP)	Farmers	Encourages farmers to convert highly erodible and other cropland or other environmentally sensitive acreage to vegetative cover.	Federal	Current		Very
Environmental Quality Incentives Program (EQIP)	Farmers	Provides technical, educational, and financial assistance to eligible farmers to address soil, water and related natural resource concerns through a cost-share program to implement eligible structural or vegetative practices such as terraces, filter strips, tree planting and permanent wildlife habitat.	Federal Commodity Credit Corporation	Current		
Watershed Protection and Flood Prevention Program	Watershed Protection and Flood Prevention Program	Protects and restores watersheds from damage caused by erosion, floodwater and sediment to conserve and develop water and land resources, and solve natural resource and related economic problems on a watershed basis.	Federal State Local	Current		
Ordinance Revisions	Local Government	Review current E&S control ordinance and modify as appropriate. Include certification	Local Government	Proposed		Changes are proposed for state's erosion and sediment

		program with requirements for pollution prevention at construction site through preparation of an Erosion, Sedimentation and Pollution Control Plan to address trash, construction debris, leaking vehicles, storage of chemicals, etc.				control pro-gram. Channel protection and conservation subdivision ordinances will provide further guidelines for construction activity.
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MEASURES APPLICABLE TO INDIVIDUAL PARAMETERS

MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/ IMPLEMENTED	EFFECTIVENESS (Very, Moderate,)
Georgia's Best Management Practices	Georgia Forestry Commission (matters involving enforcement are generally referred to GA EPD)	Inform landowners, foresters, timber buyers, loggers, site preparation and reforestation contractors, et al, about commonsense, economical and effective practices to minimize nonpoint source & thermal pollution.	Timber Harvesters	Current	1989, 1997	Very
BMP assurance examination of active sites	Georgia Forestry Commission	To document "reasonable assurance" water quality will be proactively protected during silvicultural operations, GFC will offer monthly BMP assurance examination of active sites. Sites within watersheds of biota (sediment) impaired streams will be given priority for examination.	Georgia Forestry Commission	Current	1/1/03	Very
Agriculture BMPs	Extension Service, Natural Resources Conservation Service, Farmers	Reduce agriculture generated erosion and sediment	Local	Current		Weak (waterway has wide natural buffer)

VII. MONITORING PLAN

The purposes of monitoring are to obtain more data, to determine the sources of pollution, to describe baseline conditions, and to evaluate the effects of management and activities on water quality. Describe any sampling activities or other surveys - active, planned or proposed - and their intended purpose. Reference the development and submission of a Sample Quality and Assurance Plan (SQAP) if monitoring for delisting purposes.

Table 6. MONITORING PLAN

PARAMETER(S) TO BE MONITORED	ORGANIZATION	STATUS (CURRENT, PROPOSED, PLANNED)	TIME FRAME		PURPOSE (If for delisting, date of SQAP submission)
			START	END	
Biota (Sediment)	Georgia DNR-EPD	Planned	2005	2005	Watershed Basin Planning
Biota (Sediment)	Georgia DNR-EPD	Planned	2010	2010	Watershed Basin Planning

VIII. PLANNED OUTREACH FOR IMPLEMENTATION

List and describe outreach activities which will be conducted to support this plan and the implementation of it.

Table 7. PLANNED OUTREACH

RESPONSIBILITY	DESCRIPTION	AUDIENCE	DATE
Georgia Forestry Commission	Identify timber harvesters active in the basin in 2000 – matters involving enforcement are generally referred to GA EPD.	Timber harvester(s)	Continuous
Georgia Forestry Commission	Monthly examination of active sites. Sites within watersheds of biota (sediment) impaired streams will be given priority for examination.	Timber harvester(s)	Continuous
Extension Service, Natural Resources Conservation Service, Farmers	Agriculture BMPs	Farmers	Continuous

IX. MILESTONES/ MEASURES OF PROGRESS OF BMPs AND OUTREACH

This table will be used to **track and report progress of management measures including BMPs and outreach**. Record milestone dates for:

- accomplishment of management practices or activities - outreach activities
- installation of BMPs

to attain water quality standards. Comment on the effectiveness of the management measure, how much support the measure was given by the community, what was learned, how the measure might be improved in the future, and any other observations made. This table can be "pulled out" of this template and used to report and track progress.

Table 8. MILESTONES

MANAGEMENT MEASURE	RESPONSIBLE ORGANIZATIONS	STATUS		COMMENT
		PROPOSED	INSTALLED	
BMP assurance examination of active sites	Georgia Forestry Commission	Continuous		
Agriculture BMPs	Extension Service, Natural Resources Conservation Service	Continuous		

Prepared By:	Gerald Mixon				
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E-mail:	gmixon@middleflintrdc.org				
Date Submitted to EPD:	December 2004			Revision: 0	

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APPENDIX A.

STAKEHOLDERS

List the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Marshall – Dykes Farm	P O Box 783	Americus	GA	31709		
Richard & Joan Converse	143 Salem Woods Drive	Americus	GA	31709		
Deer Creek Investments, LLC	P O Box 621	Buena Vista	GA	31803		
Azzie Lee Floyd Est	168 Floyd Road	Americus	GA	31709		
Jimmy Greene	203 Bumphead Road	Americus	GA	31709		
Daryl A Cooper	P O Box 1210	Dillingham	AK	99576-1210		
Nancy Luck Duttry	9110 Silver Point Way	Fairfax Station	VA	22039-3071		
Mary M Collier	254-C Valhalla Road	Cordele	GA	31015		
Norman W & Richard S Doster	P O Box 75	Pinehurst	GA	31070		
Angelwood Investments, Inc.	P O Box 6574	Americus	GA	31709		
Russell Toning, Reg Rep Soil and Water Conservation	2700 Palmyra Road	Albany	GA	31707-1845		
Phil Porter & Robbie Hughes, Georgia Forestry Commission	243 U S Highway 19 North	Americus	GA	31709		
Scotty Palmer, District Conservationist	128 East Forsyth Street	Americus	GA	31709		
Mr. Frank A Latimore County Extension Svc	P O Box 1027	Americus	GA	31709		
Sumter County Farm Bureau	P O Box 1104	Americus	GA	31709		
Tift Pace, Chairman Sumter County Board of Commissioners	P O Box 295	Americus	GA	31709		

Kathy Mitcham, Sumter County Health Dept	208 Rucker Street	Americus	GA	31709		
Susan Reyher Regional Health Dept. – Environmental Health	222 Pine Avenue, Room 420	Albany	GA	31701		
Janet Moehle Georgia Conservancy	18 North Main Street	Moultrie	GA	31768		

APPENDIX B.

UPDATES TO THIS PLAN

Describe any updates made to this plan. Include the date, section or table updated, and a summary of what was changed and why.



View of Bailey Branch looking upstream (N)
from bridge on Middle River Road, very near
2000 sample collection site.



View of Bailey Branch looking downstream
(S) from bridge on Middle River Road